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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,202	02/25/2004	Pierre C. Delago	14622.01	3040

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Stuart R. Hemphill, Esq.
DORSEY & WHITNEY LLP
Intellectual Property Department
50 South Sixth Street, Suite 1500
Minneapolis, MN 55402-1498

EXAMINER

BRAHAN, THOMAS J

ART UNIT	PAPER NUMBER
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3654

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,202

Applicant(s)

DELAGO, PIERRE C.

Examiner

Thomas J. Brahan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 56-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 56-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 56-61, 64 and 67-69 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach. Wampach shows a crane comprising:

a vertical post (cylindrical hub 33) including a post bearing surface forming at least a partial arc about a vertical axis of the vertical post;

a superstructure (swing bed 5) pivotal about the vertical post (33) and including a boom foot (at 9) having a pivot point (9);

a boom (boom 8) extending from the boom foot and pivotable in a vertical plane about the pivot point (9) in response to one or more lines (cable 10) extending between the boom (8) and a swivel-post head (at 97) near a top of the vertical post (as near is a relative term); and

a series of rollers (rollers 34) encompassing at least a segment of the post bearing surface, each roller (34) including a rotational axis generally parallel to the vertical axis of the vertical post (33) and a roller surface in rolling contact with the post bearing surface.

Wampach varies from the claims as rollers (34) are not arranged as a roller chain. Figure 13 of Kaltenbach shows a crane roller chain encompassing a crane post bearing surface comprising:

a plurality of rollers (rollers 26) arranged in a pivotally-linked sequence, each roller (26) including a rotational axis generally parallel to the vertical axis of the vertical post and a roller surface in rolling contact with the post bearing surface, wherein the rollers are distributed with equal spacing on an arc along the post bearing surface with at least 180 degrees between a first roller and a last roller;

a first anchor (on of the levers 29) coupled to the crane superstructure and operably, pivotally-linked to the first roller; and

a second anchor (the other lever 29) coupled to the crane superstructure and operably, pivotally-linked to the last roller; and

the first and second anchors (29) being positioned to make the arc of the roller chain substantially symmetrical with respect to the vertical plane of boom motion and to tension the rollers against the post-bearing surface, whereby the pivoting action of the rollers maintains substantially equal distribution of radial loads from the boom across all rollers in the roller chain.

Kaltenbach teaches that the roller chain arrangement allows slack to be taken up due to wear on the roller pins and controls the relative rocking motion between the superstructure and the tower, see page 2, lines 104-109. It would

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have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the rollers (34) of Wampach by forming them as roller chain, as to have their mounting adjustable, as to allow slack to be taken up and to control the relative rocking of the upper and the lower works, as taught by Kaltenbach. Having the Wampach has its boom pivot pin (9) above these rollers, as recited in claim 57. Wampach has a support collar (28) radially extending from the vertical post (33), an annular ring (36) extending from the superstructure, and a container ring including a plurality rollers (41) having rotational axes generally perpendicular to the vertical axis and wherein the rollers rollingly displace between the support collar (28) and the annular ring (36), as recited in claim 58. The container ring is below the roller chain, as recited in claim 59. When making the modification, the post bearing surface could be maintained as the outer surface of the vertical post as is shown in Wampach, as recited in claim 60. Alternatively, the modification could be made incorporating a rail, as Kaltenbach shows rails (25), see figure 5, as recited in claim 61. Kaltenbach has two rows of rollers, see figure 5, as to have one row considered as "back rollers" as recited in claim 64. Alternatively, see the rejection of claim 64 below. The rollers of the roller chain would encompass an arc of at least 270 degrees, as recited in claim 67, and would have a spacing between 2 and 20 degrees between each roller, as recited in claim 68, and which would be approximately 15 degrees, as recited in claim 69.

3. Claim 62 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach, as applied above to claim 56, and further in view of deJong. Wampach, as modified, shows the basic claimed bearing arrangement, but varies from claim 62 by not having V-shaped rollers. DeJong teaches that conical and V-shaped rollers are art recognized equivalents, see the end of column 11. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the bearing arrangement of Kaltenbach by using V-shaped rollers and a V-shaped rails instead of flat rollers and flat rails, to hold the rollers vertically, as taught by deJong.

4. Claim 62 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach, as applied above to claim 56, and further in view of Ehret. Wampach, as modified, shows the basic claimed bearing arrangement, but varies from claim 62 by having flat bearing surfaces on the rollers and on the track instead of having arcuate bearing surfaces. Ehret shows a similar crane roller in figure 2 with flat bearing surfaces and another roller bearing chain in figure 4 which has V-shaped bearing surfaces. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the roller arrangement of Wampach by having V-shaped bearing surfaces on the rollers and the tracks, as to distribute the loading on the bearings, as taught by Ehret.

5. Claim 63 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach, as applied above to claim 56, and further in view of Zaegg or Baker. Wampach, as modified, shows the basic claimed bearing arrangement, but varies from claim 11 by having flat bearing surfaces on the rollers and on the track

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instead of having arcuate bearing surfaces. Zaegg shows a similar roller bearing chain in figure 3 with flat bearing surfaces and another roller bearing chain in figure 1 which has arcuate bearing surfaces. Baker shows a similar roller bearing chain in figure 6 with flat bearing surfaces and another roller bearing chain in figure 4 which has arcuate bearing surfaces. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the roller arrangement of Wampach by having arcuate bearing surfaces on the rollers and the tracks, as these are art recognized equivalent structures, as taught by Zaegg or by Baker.

6. Claim 64 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach, as applied above to claim 56, and further in view of Goss et al '230. Wampach, as modified, shows the basic claimed bearing arrangement, but varies from claim 64 by not having an additional "back roller" which bears against the post at a location distinct from the roller chain. Goss et al '230 shows a similar crane bearing with rollers (114, 115, 122a and 122b) mounted on pivoted linkages on the front or boom side of the superstructure and idler rollers (130 and 132) fixedly mounted on the back side of the superstructure. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the roller arrangement of Wampach by using a pair of fixed "back rollers", as to have some fixedly mounted rollers for taking high stresses, as taught by Goss et al '230.

7. Claims 65 and 66 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wampach in view of Kaltenbach, as applied above to claim 56, and further in view of Burnett. Wampach, as modified, shows the basic claimed bearing arrangement, but varies from claims 65 and 66 by not having a containment pad/flange for the rollers. Burnett shows a similar crane having a roller chain (E) with rollers (v) riding on a containment pad/flange (circular way x). It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the bearing arrangement of Wampach by providing the rollers with a containment pad, to prevent displacement of the rollers in a vertical direction, as taught by Burnett. 23.


8. Applicant's remarks in the amendment filed March 21, 2007, state that "the asserted combination of Wampach and Kaltenbach is not proper, in view of the fundamental differences in their crane structures and load bearing principles". However the basic teachings in Kaltenbach of slack adjustment for a ring of roller bearings using chain links can be readily be incorporated into other types of crane bearing arrangements, including the crane bearing arrangement of Wampach. Applicant's remarks also state that even if the two references were combined, they would not meet the claim limitations as "Kaltenbach does not teach or suggest positioning roller anchors to obtain symmetry relative to the boom". However the actual wording of this limitation has the roller chain substantially symmetrical. As the roller chain ring of Kaltenbach extends completely around the support post, 360 degrees, with substantially the same spacing between every roller, it has "the of the roller chain substantially symmetrical with respect to the vertical plane of boom motion", as put forth in the claims. THIS ACTION IS

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MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. An inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Brahan whose telephone number is (571) 272-6921. The examiner's supervisor, Mr. Gene Crawford, can be reached at (571) 272-6911. The fax number for all patent applications is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions regarding access to the Private PAIR system, should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 5/26/07
Thomas J. Brahan
Primary Examiner
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